

Example of a West African urban food system: an agricultural urban system approach

Ophélie Robineau¹, Patrick Dugué², Christophe-Toussaint Soulard³

¹ CIRAD/INRA (UMR Innovation) - Montpellier - France

² CIRAD (UMR Innovation) - Montpellier, France

³ INRA (UMR Innovation) - MONTPELLIER - France

Introduction

Linkages between cities and agriculture exist since the very beginning of the cities themselves (Chevrier 2001). Urban agriculture is a long-term phenomenon in developing countries worldwide (De Bon et al, 2010; Mougeot 2000; Smit et al, 1996); it is perceived as a way to provide incomes for the urban poor but also to participate to food provision for a continuously growing urban population.

Many studies have been conducted on urban agriculture in southern countries since the 1980s, when the United Nations pointed to its potential role in poverty alleviation and food provision. In Sub-Saharan African, most authors have underlined the fact that public urban planning policies do not include references to urban agriculture: the policy dialogue is beginning but the lack of knowledge regarding urban agriculture is still a problem in proposing appropriate planning policies. Up to now, research has mainly focused on specific types of farming activities or produces, and on the farmers conducting these specific activities. Despite the important literature existing on urban agriculture and on the rural-urban linkages in Sub-Saharan Africa, only a few studies have been conducted at the city and regional scale (Aubry et al, 2012) ; system analyses considering the interactions between cities, their hinterland and urban agriculture are still to be done in order to anticipate future scenarios and draw up appropriate public policies for sustainable urban food systems.

Methods

This paper is based on the results of a research conducted in the frame of a PhD thesis in geography about urban agriculture in Burkina Faso (West Africa).

Using the concept of agricultural-urban system, this paper aims to present a system approach that has been conducted in Bobo-Dioulasso, the second largest city of the country (500.000 inhabitants). Through an analysis of regional, urban, and urban agriculture dynamics, we characterize the forms and dynamics of the agricultural-urban system, with urban agriculture as the main focus of the analysis. The "agricultural-urban system" is defined here as the ensemble of interactions that are established between cities and urban and peri-urban agriculture. Its multi-scale analysis combines the regional, city and agricultural production system scales (Valette et al, 2012).

An analysis of the literature on African cities' and Bobo-Dioulasso's history constitutes an important set of data that was used to describe the city-agriculture interactions before the Independence in 1960. Twenty interviews with institutional actors and seventy interviews with urban and peri-urban farmers helped us to understand the more recent agricultural dynamics and the way the agricultural-urban system has been shaped. Then, an analysis of the Urban Master Plan and of different agricultural and urban projects have brought the necessary information about the urban planning and agricultural development policies.

Results

Our results suggest that urban agriculture dynamics are influenced by both the dynamics of the urban system and by the dynamics of the regional agricultural system. Flows of agricultural products are in the heart of these interactions.

But the links between the city and agriculture go beyond this aspect, which explains why Bobo-Dioulasso is often qualified as an "agricultural city".

On the one hand, at the regional scale, Bobo-Dioulasso boosts the development of regional and urban agriculture (cereals, livestock production and vegetable production) through the demand for food from the urban population. Moreover, the demographic and economic development of this city is due itself to the regional agricultural dynamics : it is a crossroads of regional commercial exchanges of agricultural products, and its industrial development is based on the processing of regional agricultural products. On the other hand, at the city scale, the development of urban agriculture is boosted both by the urban demand for food and by the inputs generated by the processing of rural agricultural production : residues from the trituration of cotton seeds and the malt from breweries (from millet and sorghum) are used to feed urban livestock. Furthermore, synergies exist between urban activities and urban agriculture that enhance the development and the sustainability of urban agriculture (use of urban waste and pig manure to fertilize market gardens, feeding of urban livestock with urban crop residues for example).

Conclusions

Hence, the interactions between urban dynamics, regional dynamics and urban agriculture dynamics are tight. Within the city, interactions between different forms of urban agriculture and urban activities also participate to the shaping of the urban food system.

The results of this study should help design urban food policies that enhance the shaping of a sustainable urban food system. The analytical framework could be used in other urban centers of the world.

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Presenting author: Miss Ophélie Robineau, robineau@supagro.inra.fr